

REMARKS

This Amendment is in response to the Official Action dated March 3, 2004. By this Amendment all Claims 1-120 are cancelled without prejudice. This includes the withdrawn claims 7-23, which are cancelled herein to facilitate prosecution of this Application.

In the Official Action of March 5, 2004, Claims 65-72 were allowed. These claims have, in effect, been replaced by Claims 121-128 which are essentially identical to the cancelled claims and therefore should be considered allowable.

Claims 77, 79, 81-83, 86-88, 96-101 and 113-116 were objected to under 35 U.S.C. §112, but considered allowable if rewritten in independent form. These claims have been rewritten as Claims 132, 134, 136-138, 141-143, 151-156, 159, 168 and 169. As such, subject to further remarks, it is submitted these claims are directed to novel subject matter and, as such, are allowable under 35 U.S.C. §102 and §103.

Claim 73 which is directed to a vehicle in accordance to prior Claim 70 wherein the circular element comprises a sphere, is considered to be incorrect and has not, as such, been replaced. It is, however, considered that the subject matter is, in any event, covered by new Claim 126 which corresponds to prior Claim 70 that was considered allowable.

The drawings were objected to on page 2 of the Official Action under 37 CFR §1.83(a).

This provides the drawings in a non-Provisional Application should show every feature of the invention specified in the claims. However, it is also stated that conventional features disclosed in the description in claims where their detailed illustration is not essential for a proper understanding of the invention, they should be illustrated in the drawings in the form of a graphical drawing symbol or a labeled representation. In this connection, the specification which refers to Figure 5 has been amended to serve the purpose and, it is submitted, meets the

requirements of 37 CFR §1.83(a). Accordingly, reconsideration of the criticism of the drawings is respectfully requested. In this connection, most, perhaps all, foreign countries do not have the same requirement and, in view of international conventions relating to U.S. patents based on foreign patents, it seems clear that 37 CFR §1.83(a) serves a non-substantive purpose. In any event, it is submitted that Figure 5 as described, in particular in the specification as amended, meets the requirements of 37 CFR §1.83(a) and should be entered. In the event that the Patent Examiner continues to have objections to Figure 5, it is proposed that the undersigned and the Patent Examiner should confer on this matter in an Interview to work out drawings which the Patent Examiner will find acceptable. Concerning the allegation that new matter is being entered, it is submitted that this is not correct or, at least is certainly not intended to be correct, particularly inasmuch as it is clearly set forth that Figure 5 and the description of Figure 5 are purely for the purposes of meeting the requirements of 37 CFR §1.83(a). In this connection, it is also submitted that the rejections under 35 U.S.C. §112 bridging pages 2 and 3 of the Official Action are not germane.

Nevertheless, an alternative Figure 5 is appended hereto for consideration in the event that the Patent Examiner continues to object to Figure 1 as submitted in the last Amendment.

It is clear from the prior art as well as the knowledge of those skilled in the art how the claimed compass, gyroscope, air level device, clinometer and accelerometer work with orientation means for the vehicle of the invention. In this connection, the Patent Examiner's attention is kindly invited to U.S. Patent No. 5,109,566 to Kobayashi et al, for a self-running cleaning apparatus. Particular attention is invited to column 5, the paragraph starting on line 3, wherein it is indicated that a rate gyro is used as a direction sensor for detecting the direction of the main body 1 in the embodiment. In UK Patent Application No. GB 2313191A, wherein the

inventor is Tae Sig Kim, and which is directed to a robot cleaner direction sensor, a magnetic needle 72 is included for indicating the North Pole and the South Pole. The needle is rotatably mounted by means of a pin 70 in a hermetic container 68. A reflection disc 76 is attached to the magnetic needle 72 and rotatably supported by the pin 70 which is attached with a plurality of triangular reflective mirror 74 defining a circular shape. It is further indicated there can be a reflective mirror 74 at every degree in a 360° circumference or simply one every 10 degrees. This is all part of the navigation sensor 25 for determining floor structure. Also, attention is invited to European Patent Application No. 0 142 594, of Okumura, as set forth on page 5, line 14, a direction sensor 2 such as a gas rate gyro is used which is sensitive to changes in the traveling direction of the robot.

It is the intention of the undersigned to submit an Information Disclosure Statement which will include these three patents and others. The Patent Examiner should be well aware that compasses, gyroscopes, clinometers and accelerator meters are well known devices used in unmanned vehicles. This is also true, although perhaps to a lesser extent, in air level devices or, in other words, altimeters. See U.S. Patent No. 4,977,509 to Pitchford et al.

The rejection under 35 U.S.C. §102 is based on U.S. Patent No. 5,279,012 to Sloan. This is directed to a submerged cleaning device wherein the parts contact the underlying surface in a submerged cleaning process.

Insofar as Claim 129 is concerned, Sloan does not teach a non-submersible vehicle. It does not show a propelling unit for propelling a vehicle along a floor in an above-water environment. Most certainly, in any event, Claim 129 is not anticipated by the self-propelled steerable apparatus for removing material from the surface of a submerged area as disclosed in U.S. Patent No. 5,279,012 to Sloan. This is also true of Claim 133 which is directed to a non-

submersible vehicle that has a propelling unit propelling the vehicle in a non-liquid, air environment, the manure displacing means being non-rotatable and providing support for a major part of the vehicle's weight. This would also appear to be the case insofar as claims which are dependent on Claims 129 and 133 are concerned.

Insofar as Claim 172, corresponding to prior Claim 117, is concerned, the self-propelled cleaning device with wireless remote-control of Yokoi, U.S. Patent No. 4,306,329 does not have a manure displacing means and its suction case 42 including its suction port 42a appears to be spaced from the underlying floor whereby it does not provide any support for the vehicle 1. As such, Claim 172 certainly is not anticipated by the Yokoi reference.

Concerning the rejections under 35 U.S.C. §103, Claims 84, 85, 89-95 and 105-110 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sloan in view of U.S. Patent No. 5,569,371 to Perling. However, the patent to Perling is for cleaning the bottom of a swimming pool and utilizes a cable 22 which leads to a power source. Movement of the apparatus is provided by plastic traction brushes 2 and 4 which are independently driven by respective motors 6 and 8. Except for material which might be picked up by brushes 2 and 4, the Perling apparatus cleans the bottom of a swimming pool by means of suction. Both Sloan and Perling relate to submersible cleaning devices. Neither reference independently teaches the claimed inventions of the instant invention and further there is no teaching, as required for rejections under 35 U.S.C. §103 to make the combination or modifications suggested by the Official Action. This is, it is submitted, a hindsight rejection which does not conform to the requirements of applicable patent law. This applies even more so to the rejection of Claim 120 based on the combination of Sloan and the patent to Kim, U.S. Patent No. 5,534,762. Kim, as Yokoi, concerns a self-propelled cleaning robot which is operable in a cordless mode and a cord mode. It is respectfully

submitted that the attempt to combine the submersible Sloan device with the floor cleaning device of Kim does not comport to the statutory criteria of 35 U.S.C. §103.

The Examiner has apparently concluded that the well known saying that one does not have to be a rocket scientist to be aware of whatever only applies to the rocket field. This is not the case at all. The adage is frequently used in the engineering field to apply to what is known in the art. In other words, inasmuch as the disclosure requirements of 35 U.S.C. §112 is directed to the skill in the art and thus, in the sense of the adage, one is not required to set forth specifically in patent specifications that which those skilled in the art involved would say one does not have to be a rocket scientist to know. Indeed, it is suggested that this is a fairly accurate rule of thumb to understand what 35 U.S.C. §112 requires by way of adequate disclosure.

This Application has a total of fifty-five (55) claims of which twenty (20) are independent claims. Accordingly, it appears that the Application has not increased the total claims in the Application, but has increased the number of independent claims by three (3), whereby an additional fee of three hundred dollars (\$300.00) is required. Our check to cover same is submitted herewith. If this is in error, the Commissioner of Patents and Trademarks is authorized to credit or debit our Account No. 13-2000 as appropriate.

Further consideration and reexamination of this Application in its amended form is requested in view of 35 U.S.C. §132 and regulations in implementation thereof. It is submitted the Application in its amended form is free from ambiguity and avoids the references of record. It is further submitted the Examiner should have no difficulty in finding that the differences between the subject matter sought to be patented in this Application and prior art and usage within his expert knowledge are such that the subject matter as a whole would not have been obvious at the time the invention was made to persons having ordinary skill in the art to which

the subject matter of this Application pertains. In view of the foregoing, the allowance of claims as now presented is earnestly solicited.

Respectfully submitted,

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